www.wvara.org

April 2020

The Heterodyne

Newsletter of the West Valley Amateur Radio Association

April Virtual Meeting

DMR (Digital Mobile Radio) by Edison Fong, WB6IQN

Wednesday, April 8
Meeting Starts at 7pm

Virtual Meeting via Zoom:
https://zoom.us/j/660067844
Meeting ID: 660 067 844
More Zoom Information on Page 2

Due to the coronavirus, there will be no meeting at American Red Cross.

WVARA Repeaters (W6PIY)		
Band	**Frequency**	**PL**
6 Meters	52.580- MHz	151.4 Hz
2 Meters	147.39+ MHz	151.4 Hz
1.25 Meters	223.96- MHz	156.7 Hz
0.70 Meter	441.35+ MHz	88.5 Hz
0.23 Meter	1286.2- MHz	100 Hz

Club Net

WVARA's club net is on the W6PIY repeaters each Tuesday at 8:30 pm. All repeaters are linked together during the net. The net script can be found at www.wvara.org/net.html .

Visitors Are Welcome!

New Members

The following new members joined WVARA recently:

Ron Quan, KI6AZB
Giovanna Riva, KM6YQE
James Rudeen, KM6YWQ
Tim Stehle, KN6FGH
Max Lanfranconi, W6BG
Davide Lanfranconi, W6DGE

Welcome!!!

Zoom Meeting Instructions

There will not be a meeting at American Red Cross. Instead we will have a virtual meeting via Zoom. Join the Zoom Meeting on Wednesday, Apr 8 at7:00 PM.

https://zoom.us/j/660067844

Meeting ID: 660 067 844

(No password required)

One tap mobile: +16699006833,,660067844# US (San Jose)

Dial: +1 669 900 6833 US (San Jose)

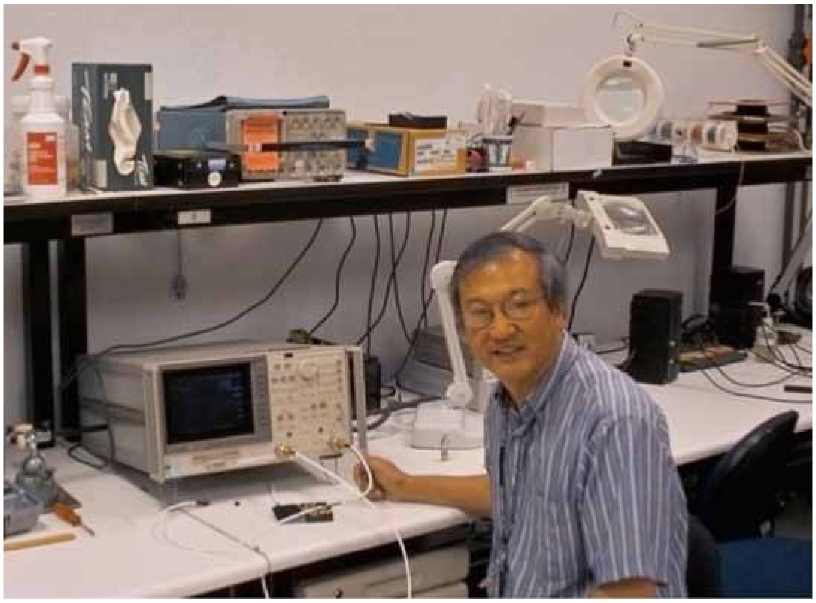
April 8 Meeting

DMR (Digital Mobile Radio) by Edison Fong, WB6IQN

Due to the coronavirus, this month's WVARA meeting will NOT be held at the Red Cross Building. Instead, we will hold a virtual meeting via Zoom at 7pm on Wednesday, April 8.

At this month's meeting Edison Fong, WB6IQN, will bring us up to speed on DMR (Digital Mobile Radio). This mode is getting really popular. The radios cost about $100-$150 depending on the quality you want. All of them also have conventional FM. DMR is a full digital format that is interfaced via the internet where one can 24/7 talk all over the world. The dream of working DX sitting on your couch is here. Since it is an open system originally set up by Motorola there are over 15 manufacturers of DMR radios – both hand held and mobiles. Learn how to get register as a DMR user, where to purchase a radio, how to program the radio and talk to the world without depending on propagation conditions.

Ed is a design consultant and has worked at Loral Space System, Microsoft and National Semiconductor. He has 25 years of experience in analog design for communications, data conversion and RF systems. Fong has 12 issued patents and has published more than 40 papers. He is a senior member of the IEEE. He also is on the faculty of UC Santa Cruz Silicon Valley, where he teaches RF Wireless Communications and I/O Design Fundamentals.



Looking forward to seeing you at Wednesday's VIRTUAL meeting!

Jim, K6EI
WVARA Vice President

WVARA Net Check-Ins (W6PIY)
Tuesdays at 8:30 PM

Call Sign	**Name**	**03/03/20**	**03/10/20**	**03/17/20**	**03/24/20**	**03/31/20**
Total		**14**	**14**	**18**	**17**	**16**
AA6RB	Roy		X		X	
AF6AE	Bill	X	X	X		X
AG6YO	Kevin	X	X	X	X	X
AI6NT	Henry				X	
K6EI	Jim	X	X	X	X	
K6GSA	Jeff			X		
K6QFO	Mike			X		X
KA6LAV	Paul				X	
KC6ZKT	Steve	X		X		X
KF6EMB	Svend	X			X	X
KK6HPF	Ross		X		X	X
KK6VF	Kevin	NET	NET	NET	NET	NET
KM6GVO	Erik		X			X
N6BTU	Wayne		X	X		X
N6FYR	Matt	X	X	X	X	X
NT6S	Tom					X
NU6P	John					X
W6BG	Max	X				
W6ESL	Tom	X	X	X	X	X
W6IA	Mark	X	X	X	X	X
W6PK	Phil			X	X	
W8RJL	Ron	X	X	X	X	X
W9KKN	Bill			X		
WB6JHI	Steve	X	X	X	X	
WB6KHP	Dave	X	X	X	X	X
WD9DD	Russ	X			X	
WR3K	Greg			X		
WR6Z	Dave			X	X	

Looking at QST's Crystal Ball 74 Years Later

Jim Peterson, K6EI

Back in February 1946, QST published "The Crystal Ball": a set of fancifully tongue-in-cheek predictions by Carl Stotz, W3EPJ/2, regarding what ham radio might look like in the distant future.

For those of you who weren't radioactive in the 1940s, it's easy to forget that a modern amateur station of that vintage consisted solely of vacuum tubes. CW and AM were the only choices of modulation -- not even SSB. The feedline from your station to the sky hook in the backyard consisted of ladder line (not coaxial cable). And of course computers in the home were still a quarter century in the future, which meant that digital modes like PSK-31 and FT8 were far beyond anyone's comprehension.

QST's Crystal Ball in 1946 got some details wrong -- for example, who last saw a print edition of Esquire magazine? But what is far more striking is ***how many things the article totally nailed*** – such as no-tuning-required transceivers, automatic signal selection, automated QSOs with pre-canned message exchanges, and of course automated logging and QSLing just to name a few. Take a look at the attached copy of the original article and see how many other on-target predictions you can identify!

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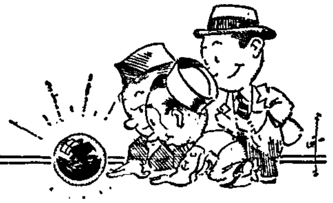
THE CRYSTAL BALL



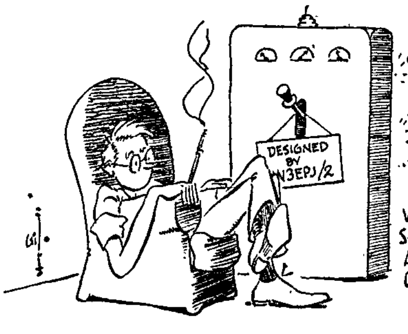
CONDUCTED BY A. DAVID MIDDELTON,* W2OEN

Several winning entries in the Crystal Ball were contributed by LSPHs, OPLOs and some by "would-be" amateurs. Realizing that there will be a large number of newly-hatched amateurs as soon as licensing is resumed, we feel that it is high time this Department lent a hand in the design and construction-planning of their first, and maybe their most important, gear and station.

We therefore suggest that some of you expert crystal ball gazers dream up the "ideal beginner's rig" based on your own past experience, the availability and cost of parts, the ease of construction (by a beginner) and the overall usage by a new amateur. Here's your chance, OT, to help the new feller get started on the right track. Will you lend a hand?

ON OR OFF?

From the articles printed in the Crystal Ball it is evident that most of the brethren have their mental machinery running at prewar speeds. Don't they realize that we have entered upon a new era of rockets, A-bombs, robots, and fungicides? Why hack around with these pitiful pseudo-modern ideas for the new Ham Station? Here is a plan for a rig combining simplicity and ease of operation.



JOE IS FACED WITH A DECISION - SHOULD HE HAVE ANOTHER QSO -- OR THROW THE SWITCH?

First, let us examine the fundamental requirements of an ideal amateur station. The primary question confronting the average ham is: does he want his station *on*, or does he want it *off?* Reference to the literature will confirm that an "on-off" switch is the most practical solution to this problem. Having established this component as a prerequisite, let us delve into the less-interesting sub-assemblies to be tied into the on-off switch. The best way to cover this is to describe the sequence of operations occurring when this switch is thrown from the "off" to the "on" positions.

Joe Blow strolls into his shack, turns on the aforementioned switch, lights a cigarette, and starts reading the latest copy of *Esquire.* Rotating beam antennas on all amateur bands start scanning the horizon, feeding in signals to appropriate receivers, which are scanning the bands in frequency, looking for a CQ. Let us suppose that the receiver system on band A finds a CQ first. The audio signal, having passed through the CQ-pass filters, operates relays which de-energize the other receivers, switch off the scanning function of antenna A, and automatically points the beam at the originating transmitter by means of an appropriate servo system. Simultaneously, Joe's own transmitter is automatically tuned to the frequency of the incoming signal, and held in readiness to transmit. As soon as the received signal stops, the transmitter sends out a call automatically prepared on a magnetic wire recorder from the call sent by the other station and including Joe's call.

Whenever the other station breaks in, Joe's transmitter stands by and his receiving system comes into its own. Basically, the signal is fed into three channels, the Log Channel, the QSL Channel, and the Miscellaneous Channel. The Log Channel uses information contained in the signal relating to the signal strength and the time the QSO started, and prints it on the Log Sheet. The QSL Channel, in a similar manner, prints part of the QSL card. The Miscellaneous Channel accumulates the non-essential information passed out by the other station and feeds it into the waste basket. It also performs the very essential function of taking the signal report given, running it through a computer coördinating distance, number of previous QSO's, and blood pressure of Brother Joe in calculating a weighting formula to be applied to the otherwise accurate RST report to be given back to the distant station.

When the victim stands by, Joe's station automatically goes to the transmit position, sends out "Good Morning," "Good Evening," or "Good Afternoon," as determined by a suitably-connected clock, transmits the other fellow's RST report complete with fudge factor, gives the weather as measured by a barometer and thermometer on the roof, states the QTH (not a variable, making this part simpler), adds 73 and signs.

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* Department Editor.

After the other station signs, the Log and QSL machines finish printing their respective cards. When this is complete and the QSL card has been automatically shot out to the nearest mail box, the second-hand air raid siren is energized to distract OM Blow from his *Esquire*. He is then faced with a decision. Should he let things take their course and have another QSO, or should he throw the switch to "off" and delve further into the printed pulchritude?

— *Carl C. Stotz, W3EPJ/2*

Courtesy February 1946 QST

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73